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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,131	08/28/2003	Sokichi Hibino	TIC-0048	8189

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EXAMINER	
DWIVEDI, VIKANSHA S	
ART UNIT	**PAPER NUMBER**
3746	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/651,131	HIBINO ET AL.	
	Examiner	Art Unit	
	Vikansha S. Dwivedi	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *5-14, 17, 19-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,15,16,18 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/24/03, 7/30/04, 11/2/2005*
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse, of the Species of Figs. 3, 4, 7, 8, and 19 from Set 1 and the Species of Fig. 1 from Set 2. Applicant set forth that claims 1-11, 15, 16, 18, and 24 read on the elected species, the reply filed on 2/27/2006 is acknowledged. The examiner notes that the material of claims 5-11 is directed to material from the non-elected species, shown in figure 16 and 17. Note part 57 i.e. the communication groove is shown in Figure 16 and 17. The examiner has withdrawn these claims.

Claims 5-11, 12-14, 17, 19-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected set of species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/27/2006.

Information Disclosure Statement

Applicant Information Disclosure Statement submitted on 11/24/2003, 7/30/2004 and 11/02/2005 are acknowledged. Since the submission complies with 37CFR 1.97 and 1.98 the references listed therein have been considered. Initialed and dated copies of Applicant's IDS forms 1449 are attached to the instant Office action.

Priority

The priority claimed for the application has been acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 1-4, 15, 16, 18 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by either Takenaka et al. (U.S. Patent number 4,723,891) or Taguchi (U.S. Patent number 4,747,753).

Takenaka et al. or Taguchi disclose a swash plate type variable displacement compressor connected to an external drive source (seen in Figure 1 of Takenaka et al. as well as Taguchi) for compressing refrigerant gas that contains lubricating oil comprising: a cylinder block (12: Taguchi and 1: Takenaka) defining a cylinder bore (14: Takenaka and 17: Taguchi); a housing (11: Taguchi and 2: Takenaka) fixed to the cylinder block (seen in Figure 1 of Takenaka et al. as well as Taguchi), the housing defining a crank chamber (13:Takenaka and Taguchi), a suction chamber (151: Taguchi, 6:Takenaka) and a discharge chamber (7: Takenaka and 152: Taguchi); a drive shaft (2:Taguchi and 17: Takenaka) supported by the housing and the cylinder block for rotation (seen in Figure 1 of Takenaka et al. as well as Taguchi), the drive shaft being driven by the external drive source, the drive shaft having an axis; a swash plate supported by the drive shaft in the crank chamber so as to rotate integrally with the drive shaft, the swash plate being inclinable with respect to the axis of the drive shaft, an inclination angle of the swash plate being varied in accordance with the pressure in the crank chamber; a piston (16: Takenaka and 20: Taguchi) accommodated in the cylinder bore so as to define a compression chamber in the cylinder bore, the piston being coupled to the swash plate, the rotation of the swash plate being converted into the reciprocating movement of the piston, displacement of the compressor being varied by the reciprocation of the piston in accordance with the inclination angle of the swash plat ; and a control mechanism for controlling pressure in the crank chamber, the control mechanism including a bleed passage that interconnects the crank chamber with the suction chamber for decreasing the pressure in the crank

chamber, wherein the compressor is formed such that the lubricating oil stored in the crank chamber is discharged into at least one of the suction chamber, the discharge chamber and the compression chamber while the inclination angle of the swash plate is substantially a maximum inclination angle; wherein the control mechanism includes: a supply passage interconnecting the discharge chamber with the crank chamber; and a control valve (29 and 41: Takenaka, 32: Taguchi) arranged on the supply passage for adjusting an opening degree of the supply passage, wherein the bleed passage has a constant inner diameter for continuously interconnecting the crank chamber with the suction chamber regardless the inclination angle of the swash plate; wherein the compressor is continuously driven while the external drive source is running. The said compressor further comprising a communication path for interconnecting the crank chamber with the compression chamber while the inclination angle of the swash plate is substantially the maximum inclination angle and the piston is located substantially at its bottom dead center; wherein the communication path is a communication passage that extends through the cylinder block; wherein a chamfer is formed at an opening of the communication passage at a compression chamber side; wherein the control mechanism includes: a supply passage interconnecting the discharge chamber with the crank chamber, and a control valve arranged on the supply passage and the bleed passage, the control valve adjusting both opening degrees of the supply passage and the bleed passage.

Claim 1-4, 15, 16, 18 and 24 are also rejected under 35 U.S.C. 102(e) as being anticipated by Saeki (U.S. Patent number 6,966,195).

Saeki disclose a swash plate type variable displacement compressor connected to an external drive source (seen in Figure 1) for compressing refrigerant gas that contains lubricating oil comprising: a cylinder block (50) defining a cylinder bore; a housing (Shown in Figure 1) fixed to the cylinder block (seen in Figure 1), the housing defining a crank chamber (14), a suction chamber (Shown in Figure 1) and a discharge chamber (Shown in Figure 1); a drive shaft supported by the housing and the cylinder block for rotation (seen in Figure 1), the drive shaft being driven by the external drive source, the drive shaft having an axis; a swash plate supported by the drive shaft in the crank chamber so as to rotate integrally with the drive shaft, the swash plate being inclinable with respect to the axis of the drive shaft, an inclination angle of the swash plate being varied in accordance with the pressure in the crank chamber; a piston (Figure 1) accommodated in the cylinder bore so as to define a compression chamber in the cylinder bore, the piston being coupled to the swash plate, the rotation of the swash plate being converted into the reciprocating movement of the piston, displacement of the compressor being varied by the reciprocation of the piston in accordance with the inclination angle of the swash plat ; and a control mechanism for controlling pressure in the crank chamber, the control mechanism including a bleed passage that interconnects the crank chamber with the suction chamber for decreasing the pressure in the crank chamber, wherein the compressor is formed such that the lubricating oil stored in the crank chamber is discharged into at least one of the suction chamber, the discharge chamber and the compression chamber while the inclination angle of the swash plate is substantially a maximum inclination angle; wherein the control mechanism includes: a

supply passage interconnecting the discharge chamber with the crank chamber; and a control valve (15) arranged on the supply passage for adjusting an opening degree of the supply passage, wherein the bleed passage has a constant inner diameter for continuously interconnecting the crank chamber with the suction chamber regardless the inclination angle of the swash plate; wherein the compressor is continuously driven while the external drive source is running. The said compressor further comprising a communication path for interconnecting the crank chamber with the compression chamber while the inclination angle of the swash plate is substantially the maximum inclination angle and the piston is located substantially at its bottom dead center; wherein the communication path is a communication passage that extends through the cylinder block; wherein a chamfer is formed at an opening of the communication passage at a compression chamber side; wherein the control mechanism includes: a supply passage interconnecting the discharge chamber with the crank chamber, and a control valve arranged on the supply passage and the bleed passage, the control valve adjusting both opening degrees of the supply passage and the bleed passage (Column 1 lines 20-35, Column 2 lines 37-44).

Claim 1-4, 15, 16, 18 and 24 are further rejected under 35 U.S.C. 102(a or b) as being anticipated by either European Patent Application (EP 0900936) or Japanese patent Application (2000JP-0367279).

European patent application disclose a swash plate type variable displacement compressor connected to an external drive source (seen in Figure 1) for compressing

refrigerant gas that contains lubricating oil comprising: a cylinder block defining a cylinder bore; a housing (Shown in Figure 1) fixed to the cylinder block (seen in Figure 1), the housing defining a crank chamber (3), a suction chamber (13) and a discharge chamber (14); a drive shaft supported by the housing and the cylinder block for rotation (seen in Figure 1), the drive shaft being driven by the external drive source, the drive shaft having an axis; a swash plate (5) supported by the drive shaft in the crank chamber so as to rotate integrally with the drive shaft, the swash plate being inclinable with respect to the axis of the drive shaft, an inclination angle of the swash plate being varied in accordance with the pressure in the crank chamber; a piston (Figure 1 and 4) accommodated in the cylinder bore so as to define a compression chamber in the cylinder bore, the piston being coupled to the swash plate, the rotation of the swash plate being converted into the reciprocating movement of the piston, displacement of the compressor being varied by the reciprocation of the piston in accordance with the inclination angle of the swash plat ; and a control mechanism for controlling pressure in the crank chamber, the control mechanism including a bleed passage that interconnects the crank chamber with the suction chamber for decreasing the pressure in the crank chamber, wherein the compressor is formed such that the lubricating oil stored in the crank chamber is discharged into at least one of the suction chamber, the discharge chamber and the compression chamber while the inclination angle of the swash plate is substantially a maximum inclination angle; wherein the control mechanism includes: a supply passage interconnecting the discharge chamber with the crank chamber; and a control valve (19) arranged on the supply passage (18) for adjusting an opening degree

of the supply passage, wherein the bleed passage has a constant inner diameter for continuously interconnecting the crank chamber with the suction chamber regardless the inclination angle of the swash plate; wherein the compressor is continuously driven while the external drive source is running. The said compressor further comprising a communication path for interconnecting the crank chamber with the compression chamber while the inclination angle of the swash plate is substantially the maximum inclination angle and the piston is located substantially at its bottom dead center; wherein the communication path is a communication passage that extends through the cylinder block; wherein a chamfer is formed at an opening of the communication passage at a compression chamber side; wherein the control mechanism includes: a supply passage interconnecting the discharge chamber with the crank chamber, and a control valve arranged on the supply passage and the bleed passage, the control valve adjusting both opening degrees of the supply passage and the bleed passage (Column 5 and 6).

Japanese patent application disclose a swash plate type variable displacement compressor connected to an external drive source (seen in Figure 1) for compressing refrigerant gas that contains lubricating oil comprising: a cylinder (15) block defining a cylinder bore; a housing (Shown in Figure 1) fixed to the cylinder block (seen in Figure 1), the housing defining a crank chamber (12), a suction chamber (Figure 1) and a discharge chamber (Figure 1); a drive shaft supported by the housing and the cylinder block for rotation (seen in Figure 1), the drive shaft (11) being driven by the external drive source (13), the drive shaft having an axis; a swash plate (14) supported by the

drive shaft in the crank chamber so as to rotate integrally with the drive shaft, the swash plate being inclinable with respect to the axis of the drive shaft, an inclination angle of the swash plate being varied in accordance with the pressure in the crank chamber; a piston (17) accommodated in the cylinder bore so as to define a compression chamber in the cylinder bore, the piston being coupled to the swash plate, the rotation of the swash plate being converted into the reciprocating movement of the piston, displacement of the compressor being varied by the reciprocation of the piston in accordance with the inclination angle of the swash plat ; and a control mechanism for controlling pressure in the crank chamber, the control mechanism including a bleed passage that interconnects the crank chamber with the suction chamber for decreasing the pressure in the crank chamber, wherein the compressor is formed such that the lubricating oil stored in the crank chamber is discharged into at least one of the suction chamber, the discharge chamber and the compression chamber while the inclination angle of the swash plate is substantially a maximum inclination angle; wherein the control mechanism includes: a supply passage interconnecting the discharge chamber with the crank chamber; and a control valve (30) arranged on the supply passage (28) for adjusting an opening degree of the supply passage, wherein the bleed passage has a constant inner diameter for continuously interconnecting the crank chamber with the suction chamber regardless the inclination angle of the swash plate; wherein the compressor is continuously driven while the external drive source is running. The said compressor further comprising a communication path for interconnecting the crank chamber with the compression chamber while the inclination angle of the swash plate is

substantially the maximum inclination angle and the piston is located substantially at its bottom dead center; wherein the communication path is a communication passage that extends through the cylinder block; wherein a chamfer is formed at an opening of the communication passage at a compression chamber side; wherein the control mechanism includes: a supply passage interconnecting the discharge chamber with the crank chamber, and a control valve arranged on the supply passage and the bleed passage, the control valve adjusting both opening degrees of the supply passage and the bleed passage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikansha S. Dwivedi whose telephone number is 571-272-7834. The examiner can normally be reached on M-F, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VSD

TAE JUN KIM
PRIMARY EXAMINER